What are MPTs and why do we need them? What’s available now and on the horizon

Dr. Nomita Chandhiok
Deputy Director General (Sr.Grade)/Scientist ‘F’
Div. of Reproductive & Child Health
Indian Council of Medical Research
New Delhi, India

Session 6: Multipurpose Prevention Technologies for Girls and Women
Women’s varying SRH needs over time

Reproductive years

15 yrs

49 yrs and beyond

If sexually active:
• Delay in first birth
• Prevention of STI/RTIs & HIV

• Planning &
• Spacing Pregnancy
• Prevention of STI/RTIs & HIV

• Need Long term or Permanent method of contraception
• Prevention of STI/RTIs & HIV

Greater choices would empower women to have more control over their health
Our Challenge as Researchers, Providers and Policy Makers...

How to address the primary sexual and reproductive health concerns of all women?

1. Healthy timing & spacing of intended pregnancies
2. Safe birth for mother and child
3. Protection against sexually transmitted infections (STIs), including HIV
Healthy timing and spacing of intended pregnancy

**Adolescent fertility rate (per 1000 girls aged 15-19 yrs)**

- 16 million adolescent girls give birth each year
- 3 million unsafe abortions
- 50% higher perinatal

Rate of decline has slowed in the last decade
Healthy timing and spacing of intended pregnancy

- Unmet need for FP of 222 million women in developing countries translates annually to:
  - 63 million unintended pregnancies
  - 23 million abortions
  - 590,000 newborn deaths
  - 291,000 pregnancy-related deaths

- South & West Asia has largest unmet need:
  - 88 million women
  - 41% of TOTAL unmet need

- Africa has made the least progress in family planning

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### Regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Modern contraceptive use</th>
<th>Unmet need for modern contraceptives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing world</td>
<td>57</td>
<td>18</td>
</tr>
<tr>
<td>Western Africa</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Middle Africa</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>Eastern Africa</td>
<td>27</td>
<td>32</td>
</tr>
<tr>
<td>Northern Africa</td>
<td>45</td>
<td>71</td>
</tr>
<tr>
<td>Southern Africa</td>
<td>58</td>
<td>16</td>
</tr>
<tr>
<td>Western Asia</td>
<td>34</td>
<td>35</td>
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<tr>
<td>South Asia</td>
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<td>24</td>
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</tr>
<tr>
<td>Southeast Asia</td>
<td>56</td>
<td>20</td>
</tr>
<tr>
<td>Eastern Asia</td>
<td>56</td>
<td>88</td>
</tr>
<tr>
<td>Caribbean</td>
<td>56</td>
<td>22</td>
</tr>
<tr>
<td>Central America</td>
<td>64</td>
<td>18</td>
</tr>
<tr>
<td>South America</td>
<td>70</td>
<td>17</td>
</tr>
</tbody>
</table>

Source: Singh & Darroch 2012

Large variation in Unmet need for and use of modern contraception (developing countries)
### Unintended pregnancies and their outcomes

<table>
<thead>
<tr>
<th>Region</th>
<th>Total No of pregnancies (millions)</th>
<th>% pregnancies unintended</th>
<th>Unintended pregnancy outcomes (as % of all)</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>208.2</td>
<td>41</td>
<td>Births: 16, Abortions: 20, Miscarriages: 5</td>
</tr>
<tr>
<td>More developed region</td>
<td>22.8</td>
<td>47</td>
<td>Births: 15, Abortions: 25, Miscarriages: 6</td>
</tr>
<tr>
<td>Less developed region</td>
<td>185.4</td>
<td>40</td>
<td>Births: 16, Abortions: 19, Miscarriages: 5</td>
</tr>
</tbody>
</table>

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*Singh S et al 2010*

### Unsafe abortions among adolescents and youth

- **Adolescents and youth (15-24)**: 40%
- **Other**: 60%

Safe birth for mother and child

Maternal Mortality ratio (per 100,000 live births), 2010

47% reduction in last 2 decades

Preventing unintended pregnancies saves maternal lives
Protection against STIs, including HIV

Adults and children estimated to be living with HIV, 2011
By WHO region

2.7 million infected every year
1.8 million women every year die of AIDS
2400 young people infected every day
Protection against STIs, including HIV

2003 regional estimates of HSV-2 prevalence in women, by age group

315 million women infected

Adapted from: KJ Looker, GP Garnett and GP Schmid; An estimate of the global prevalence and incidence of herpes simplex virus type 2 infection; Bulletin of the World Health Organization, 2007, vol 86/10/07
Protection against STIs, including HIV

Age-standardised prevalence of cervical HPV DNA in sexually active women
IARC Multi-centre HPV Prevalence Survey, 1995-2002

<table>
<thead>
<tr>
<th>Country</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>933</td>
</tr>
<tr>
<td>Argentina</td>
<td>908</td>
</tr>
<tr>
<td>India</td>
<td>1940</td>
</tr>
<tr>
<td>Colombia</td>
<td>1981</td>
</tr>
<tr>
<td>China, Yangcheng</td>
<td>671</td>
</tr>
<tr>
<td>Chile</td>
<td>971</td>
</tr>
<tr>
<td>Mexico</td>
<td>1340</td>
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<tr>
<td>Vietnam, Ho Chi Minh</td>
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<tr>
<td>Korea</td>
<td>870</td>
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<tr>
<td>Italy, Turin</td>
<td>1013</td>
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<tr>
<td>Thailand, Lampang</td>
<td>1024</td>
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<tr>
<td>Netherlands</td>
<td>3299</td>
</tr>
<tr>
<td>Thailand, Songkla</td>
<td>716</td>
</tr>
<tr>
<td>Spain</td>
<td>908</td>
</tr>
<tr>
<td>Vietnam, Hanoi</td>
<td>1007</td>
</tr>
</tbody>
</table>
Protection against STIs, including HIV

World age-standardized incidence rates of cervical cancer

530,000 new cases
275,000 deaths

85% in developing countries
159,800 deaths in Asia

ASR, age-standardized incidence rate; Rates per 100,000 women per year.
Protection against STIs, including HIV

Estimated new cases of curable STIs
(WHO, 2008)

Chlamydia 105.7 M
Gonorrhoea 106.1 M
Syphilis 10.6 M
Trichomoniasis 276.4 M

Total number of cases: 498.9
male to female ratio 1.14
What are Multipurpose Prevention Technologies (MPTs)?

A single product, configured for at least two SRH prevention indications:
- **Contraception**
- **Protection against HIV & other STIs**
- **Other health benefits**

**WHY MPTs?**

- Greater **efficiency** in terms of cost, access and delivery of SRH prevention products
- Capitalize on the demand in populations using one product type to achieve uptake and use of a second “product”

Alternative Configurations:
- Drug + Drug
- Drug + Device
- Vaccines
MPTs available now and on the Horizon

Female Condom

Male Condom

<table>
<thead>
<tr>
<th>Drug combinations</th>
<th>Drug/device combinations</th>
<th>Multipurpose vaccines</th>
<th>Bacterial therapeutics</th>
<th>Nanoparticals</th>
</tr>
</thead>
</table>

The future of MPTs...
Currently available products - Female Condom

- Enhances women’s ability to negotiate and ensure safer sex
- Low demand, high cost, strong provider bias
- “Learning curve” for acceptability and use; improves with time
- Male partner response range from enthusiastic to rejecting
- Consistent use is optimal, but difficult to achieve
- Interventions that will enhance FC use over the longer term
- Sexuality, communication & negotiation skills should be embedded in user education
✓ “On demand” products:

- Used around the time of intercourse
- Appropriate for women who have intermittent sex,
- or who would like more direct control over their own protection
- Barrier devices and active agents (Gels)
Multipurpose Prevention Technologies

✓ Sustained release devices:
  - User-initiated, but do not require daily action
  - Should increase adherence, and therefore overall effectiveness
  - Vaginal rings, injectables
To Conclude...

- MPTs could simultaneously prevent pregnancy, HIV, HSV-2, and HPV with a great potential for public health impact
- Increased integration of family planning and SRH services
- Expand the contraceptive method mix and uptake
- Socio-cultural beliefs and practices, gender dynamics, users and providers perspective and positioning of product would impact product acceptability
- Support of program and policy makers will depend upon effectiveness, safety and acceptability of products
THANK YOU

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